

REMARKS

Claims 65-70, 73-90 and 92-96 are currently pending in this application. Claims 65, 75, 76, 83, 89 and 90 have been rejected under 35 USC §102(b) as anticipated by Sawyers et al. (U.S. Patent No. 5,018,203), while claims 65, 68, 69, 75-77, 81-83, 86, 87, 89, 90, 93 and 96 have been rejected as anticipated by Singer (U.S. Patent No. 5,711,308). In addition, claims 66, 67, 84 and 85 have been rejected under 35 USC §103(a) as unpatentable over Singer in view of Schwab et al. (U.S. Patent No. 5,359,887), while claims 70 and 88 have been rejected as unpatentable over Singer, claims 73, 74 and 92 have been rejected as unpatentable over Singer in view of Anderson (U.S. Patent No. 5,721,783), and claims 78-80, 94 and 95 have been rejected as unpatentable over Singer in view of Cain et al. (U.S. Patent No. 5,133,017). However, for the reasons set forth hereinafter, applicants respectfully submit that all claims which remain of record herein distinguish over the cited references, whether considered separately or in combination.

By the foregoing amendment, independent claims 65 and 83 have been amended to incorporate the limitations of former claim 78, 80 and 94. Accordingly, each of the claims which remains in this application incorporates the limitations that the apparatus (claim 65) or the method (claim 83) further comprehends the use of a video tracking device which is configured to search for, acquire and track the location of the transducer and that the tracking device

communicates the location to a measuring unit. In addition, the claims also recite that the noise detection is performed optically, with light being reflected from the transducer to generate an optical signal representing the noise. The optical signal is received by a remote measuring device and used to generate a noise canceling signal which is transmitted to the region of interest.

The Singer reference provides a method and apparatus for sensing displacement of the ear drum of an individual in response to excitation by the surrounding auditory environment. For this purpose, a laser beam or the like is reflected from the subject's eardrum or from a reflector attached to the eardrum. A remote measuring device must be mounted on the user, in order to be kept sufficiently aligned with the ear canal to allow the sensing light to reach the eardrum. The noise measurements obtained from the light reflected from the eardrum may be used to generate a canceling signal, reducing the level of noise perceived by the subject. The apparatus utilized by Singer appears to be quite intrusive, as a measuring device must be worn by the subject, and the light source, such as a laser, must be directed into the ear of the subject. The present invention, on the other hand, provides a relatively unobtrusive solution that allows measurement of the noise level close to the subject's ear. Essential to this technique is the proposition that the transducer must be accessible by the light signal used to measure noise, and the measuring device is not mounted on the subject. In order to provide an operative system with these features, it is

necessary for the measuring device to be able to track the position of the transducer, in order to correctly receive the reflected light signals indicating noise in the vicinity of the subject. Since the sensor relies on an optical transmission, a video tracking device may be used to locate the position of the transducer. Such devices are well known, and may be easily adapted for use in the present invention. The Singer reference neither teaches nor suggests the use of such a tracking device nor, given the fact that the laser must be worn and directed into the ear to the eardrum, would such a tracking device have any relevance in the Singer apparatus.

With regard to claims 78, 80 and 94, which have been incorporated into independent claims 65 and 83, the Office Action cites Cain et al. as disclosing a sonic tracking device, and states that it would be obvious to replace such sonic tracking device with a video tracking device. That is, Cain et al. discloses an arrangement in which a sonic emitter 490 (Figure 10) provides an audio tone that is detected by an array of detectors 492. The latter detectors, receiving a low level signal, are considered to be obscured by the head of the observer, thus identifying the location of the observer's head. Alternatively, an ultrasonic ranging device is placed on each side of the subject's head. This may be used to determine the position of the subject's head, and to adapt the timing of noise cancellation appropriately. The detectors used in this system are conventional microphones, are not mounted on the user, and are not wireless optical

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detectors used in this system are conventional microphones, are not mounted on the user, and are not wireless optical transducers. The position determination suggested in Cain et al. is not used to adapt the noise canceling operation, nor for determining and tracking the location of a sensor mounted on the user, in the manner provided in amended claims 65 and 83.

Finally, with regard to the Sawyers et al. reference, applicants note that it neither teaches nor suggests the tracking features of the invention, which have been inserted into claims 65 and 83, and was not cited with regard to claims 78, 80 and 94, which have been incorporated into claims 65 and 83. Accordingly, applicants respectfully submit that the latter claims distinguish over the Sawyers et al. reference, as well.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

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If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #038819.49818).

Respectfully submitted,


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